EPA Comments on Jorgensen Forge Early Action Work Plan Removal Action Work Plan

General Comments

Transloading, Transport and Disposal Work Plan

Upland Material Transload, Transport and Disposal

- The description of how the debris material will be handled during the demolition and bank removal is particularly concerning. There is very little discussion of the relationship between the debris stockpile with the non-debris stockpile, how releases of contaminants from the debris stockpiled on site will be prevented, how water from the debris material will be collected and treated, or how the contaminated sediments attached to the debris will be collected and disposed of. The final RAWP must include details of BMPs to prevent release of contaminants from the debris in the stockpile area.
- Similar to prior comment: there is no mention of the "protective measures" to minimize the impact to the concrete pad where the debris materials will be placed. The final RAWP must include details identifying what those measures are, and include measures for preventing environmental release from the stockpile area for debris (e.g. surrounded by berm).
- EPA understand from conversations with EMJ and its consultants that the clean backfill will be segregated from the contaminated stockpile through sequencing of work. However, there is no description of how the clean materials being used as backfill and for the bank work will be segregated and kept clean from the contaminated materials being stockpiled on site. The final RAWP must describe how the clean backfill and contaminated materials on site will be isolated/segregated.
- No BMPs to prevent releases of contamination are described for placing the materials in to articulated haul trucks, placement from the articulated haul trucks to the stockpile area, and transfer from the stockpile material to haul trucks for off-site disposal. The final RAWP must describe what steps will be taken to prevent release of the contamination of the debris and sediments from the bank removal work in to the environment during the upland transloading. This must also include maintenance, cleaning, decontamination and disposal of the BMP materials. The final RAWP must also include clarification if there is any risk of the crushed rocks damaging the PVC liner of the stockpile liner. On-site inspections (weekly at least) will include looking at the integrity of the PVC liner (per the SWPPP).
- The final RAWP must include a figure depicting the various "zone" (exclusion zone, decontamination zone, and contaminant zone) for preventing environmental releases from the site. The figures should include zones for preventing release of contaminants in to the environment (exclusion zone, decontamination zone, and contaminant zone) for the trucks moving through the site, as well as people at the site.
- A wheel wash will be installed at the Jorgensen Forge site to prevent tracking of any materials from the site on to City of Seattle streets. Vehicles passing through the wheel wash should proceed slowly enough as to address concerns about wet undercarriages of vehicles leading to water quality concerns once the vehicles move off-site. BMPs minimizing excessive water flow across the site must be identified in the final RAWP. The final RAWP must describe how water generated from wheel wash shall be treated and disposed of. Based on conversations with EMJ, EPA understands a desire for flexibility to remove the wheel wash in the event the water from the wheel wash results in more environmental harm than good.

The final RAWP must include specific standards for assessing if the wheel wash is posing excessive environmental harm.

- Any material being transported off of the Jorgensen Forge site must be treated as CERCLA hazardous waste, unless EMJ or its contractors are prepared to test materials prior to transport to demonstrate otherwise.

Dredge Material Transload, Transport and Disposal

- The RAWP states that free water accumulating in the barges during dredge operations will be pumped off to the extent practical. Based on conversations with EMJ, EPA understands that Pacific Pile and Marine will apply a standard of passing a "paint filter test" before removing any sediments from the barges at the transloading facility. The final RAWP should state that as applicable throughout the document.
- The material from the cofferdam above 50 ppm PCB must be in a water tight container. This should be container with steel welded seams, unless EMJ can provide another proposal that can be guaranteed to be water tight for transloading, transport and disposal purposes. The final RAWP must include information about verifying that the container is water tight before transporting off-site.
- The material above 50 ppm PCB (AKA TSCA material) should not be transported in open top containers, as described in Appendix H *Transload, Transport and Disposal Work Plan.* They final RAWP must include transporting this material in covered containers.
- Once sediments barge has arrived to the transloading facility, additional dewatering may occur at the transloading facility, and water may collect in the barge from the spill apron. The final RAWP must contain details accounting for the expected volume of water at the transloading site, and how that water will be treated. EPA understands that the water will be treated off-site by a third party, which should be stated in the final RAWP. The final RAWP must also include the final authorizations from King County.
- Similar to prior comments: the final RAWP must include greater detail specific to handling debris during transloading. This must include: BMPs to prevent environmental releases from the debris at the site in its entirety, design to collect any water/sediment from debris at the site, and decontamination of equipment used on debris at the site.
- Similar to prior comments: EPA requires a wheel wash be in place to prevent tracking of any materials from the site on to City of Seattle streets. Vehicles passing through the wheel wash should proceed slowly enough to address concerns about wet undercarriages of vehicles leading to water quality concerns once the vehicles move off-site. The final RAWP should include details of treatment and disposal of the wheel wash water. Based on conversations with EMJ, EPA understands a desire for flexibility to remove the wheel wash in the event the water from the wheel wash results in more environmental harm than good. The final RAWP must include specific standards for assessing if the wheel wash is posing excessive environmental harm.
- The final RAWP must include trucks being inspected prior to leaving the PPM TTD.
- The final RAWP must explain how the equipment at the PPM TTD will be decontaminated, and how the water and materials generated during decontamination will be handled.
- Similar to prior comments: The final RAWP must include a figure depicting the various "zone" (exclusion zone, decontamination zone, and contaminant zone) for preventing environmental releases at the PPM TTD. The figures must also identify where the stormwater drains are on site, and where materials will be placed to isolate the potential releases from the transloading activities to the stormwater system.

- The final RAWP must include a copy of the HASP for the PPM TTD site.

Authorizations for transloading, transportation and disposal: There are several references in the RAWP to future permits that will be obtained for the removal activities and transloading. The final RAWP must include the issued authorizations/permits. These include:

- **KC Industrial Stormwater Authorization**: Required at both the transloading facility if discharging water in to the KC Industrial Stormwater System, and also for the uplands water quality treatment.
- **KC Solid Waste Facility Permit**: King County has said that the 18,000 gallon weir tank at the PPM TTD triggers a King County Solid Waste Facility requirements.

Preventing Environmental Releases during Removal Activities

Removal and management of the "debris": As noted previously: there is very little detail regarding prevention of contaminant release when handling "debris" at either the Jorgensen Forge or PPM TTD. There are BMPs identified for dewatering the cresote piling, and draining any remaining liquid from culverts prior to blocking with grout. The final RAWP must include discussion of BMPs for all "debris", including during demolition. The final RAWP must include: sufficient BMPs in place to manage any potential environmental release of un-anticipated hazardous materials (including in to the LDW), testing any unknown materials, handling & disposal of those materials, and decontaminating any debris. Management of the culverts, in particular, must be addressed in more detail throughout the body of the RAWP and subsequent appendices. BMPs must be put in place to prevent accidental release of any materials within the culvert to the LDW. The final RAWP must also identify BMPs used to prevent cement dust from entering the stormwater drains or LDW directly given that the demolition work includes cutting up large pieces of cement and using a cement grout to block the culverts.

BMPs in place for bank post excavation, pre-armoring slope: The RAWP does not discuss how the bank (post excavation, pre-armoring) will be addressed to ensure sediments do not end up in the LDW. The only steps taken to prevent sediment from the open bank face from entering the LDW is a boom at the shoreline. Groundwater seeping through the bank face resulted in turbidity at the adjacent Boeing Plant 2 site during recent restoration work. Therefore, the final RAWP must describe steps taken to prevent/manage any turbidity resulting from the bank in the LDW.

BMPs associated with transloading and transporting of materials: Similar to prior comments: the transloading and transport of the materials from the Jorgensen Forge removal action site are concerning. The final RAWP must include detailed discussions and diagrams of the BMPs that will be employed throughout the transloading process at the Jorgensen Forge site and at the PPM TTD facility to prevent the release of contaminants in to the environment.

Addressing Dust and Exhaust Emissions from Equipment: There are few descriptions of BMPs that will be employed to minimize dust dispersion during the removal action. The final RAWP must describe the BMPs in place to address both minimizing dust and require construction equipment be turned off as soon as practicable, with idling not to exceed 5 minutes.

Health and Safety Plans

Discrepancies between Attachment A-1 and Attachment A-2: While EPA does not approve HASP, the agency does provide comments on these documents. EPA also has authority to stop activities until it is safe to proceed. Based on the review of the current HASP in Attachment A-2 of the RAWP, the current HASP lacks

enough detail to ensure that work can proceed safely during the removal action. The discrepancies between the HASP for the consultants (Attachment A-1) and contractors (Attachment A-2) do not identify the some of the same basic hazards (e.g. environmental exposure), nor equipment (e.g. onsite AED). For example: Anchor discusses steps to address heat stress (move to shade, provide cool beverages); while there is no mention of these types of scenarios in the PPM's HASP. PPM HASP must reflect, at a minimum, the same hazards identified in the Anchor HASP. The types of health and safety equipment on site is also inconsistent. Anchor notes it will have an AED on site, while there is no mention within the PPM HASP of an AED. While both HASPs note the use of first aid kits, it's not clear if they will be co-located, or at separate stations. Finally, the Anchor HASP has much more detail on the roles and responsibilities of individuals on site, as well as the chain of command in the event of an emergency, than the PPM HASP. The final RAWP must include revised HASPs that provide sufficient detail as to ensure that work can safely proceed on-site prior to initiating any removal work.

Missing information in Attachment A-2: A table follows with greater detail about missing information within the PPM HASP. In addition to that information, the following is missing from the HASP associated with work in a Superfund removal action:

- It does not appear there is going to be a site safety and health officer (SSHO) at the project while construction work is being conducted. This is a project is complicated because it involves handling of contaminated sediments. A SSHO onsite would hav authority to make occupational health and safety protection decisions at the project while the work is being conducted. In addition, the SSHO would be directly supervised by a Safety and Health Manager (SHM) with CIH credentials. SHM and SSHO elements were put in place to assure that timely and effective occupational health protection decisions are made when occupational health and safety hazards change as so often happens on construction projects.
- The description of chemical contamination and how it will impact the workers implementing this cleanup should be expanded on, even if the results of the contaminant exposure evaluation for workers implementing this cleanup shows little potential for exposure. Plan users (mainly the workers on this project) need to be able to read and understand how they are being protected from contaminant exposure or offered an explanation as to why the work being conducted just does not cause exposure at levels of occupational health and safety concern.
- There is nothing in the plan about occupational exposure monitoring. Some occupational exposure monitoring would confirm that use of PPE and requirements in the plan are correct for the level of PCBs at the site.
- Greater detail should be included in the event respirators were needed to be used at the site.
- A plan should be in place with emergency response providers for emergency response services for workers who may be contaminated with PCB sediment.
- There is no mention of medical surveillance as required for hazardous waste site cleanup operations (1910.120 (a) through (o) HAZWOPER for cleanup operations).
- The description of the PPE to be used does not really explain how it is protective for PCB exposure.

Figures for the HASP at the Site: There are no figures identifying how the site will be laid out for the purposes of controlling contamination (no exclusion zone identified, no decontamination zone identified, etc). There final figures must clearly identify where first aid materials will be.

Training for those On-Site at Jorgensen Forge and PPM TTD: The final RAWP must include descriptions of the various positions of staff for the contractors at both the Jorgensen Forge site and the PPM TTD, and the trainings that they will have to work on a CERCLA remedial site. For example, identify every position which requires 40 hour

HAZWOPER training, and ensure that each person on site performing that work has adequate and up-to-date training for any given position. Include copies of certifications for individuals on site.

HASP for the PPM TTD: The final RAWP must include the HASP for the PPM TTD. EPA expects that the HASP for the PPM TTD be as detailed as the revised HASP for the Jorgensen Forge CERCLA removal action.

Water Quality Treatment System

Handling and Disposal of Water Quality Treatment Equipment: Because the water quality treatment filters (chitosan, sand and carbon) will be concentrating PCBs within them, the final RAWP must specify how these filters will be handled and disposed of at the end of the removal action. In Boeing Plant 2, these filters where monitored and disposed of based on their PCB concentrations. Include mechanisms for sampling and evaluating the proper disposal method of these filters.

Decontamination detergent and Chitosan: For the dewatering on the water quality treatment barge system, the RAWP noted that there will be regular decontamination of the dredging equipment using detergent. The final RAWP must address any affect the detergent may have on chitosan function to ensure that the treatment is not adversely affected during decontamination.

Transloading Facility Dewatering: Based on discussions with EMJ, EPA understands that amendments will be added at the transloading facility to the sediments to ensure that they meet the "paint filter test" prior to offloading from the barge. The final RAWP must include details for adding amendments to the dredged sediments, as well as how it will be mixed. The final RAWP must include details for decontaminating any of the equipment used to add amendments to the sediments as well. The final RAWP must describe how determining when sediments are sufficient to remove from barge to the transloading facility.

Cofferdam Removal

BMPs to minimize release during the cofferdam removal: The final RAWP must specify that a load bearing apron will be in place when moving the materials from the coffer dam using the upland excavator.

Placement of backfill in cofferdam: The final RAWP must include greater detail on the backfill process for the coffer dam. The final RAWP must describe contingency plans in the event that turbidity occurs from the coffer dam.

National Historic Preservation Act ARAR

Appendix H of the Removal Design document provides an Inadvertent Discovery Plan that describes the actions that should be taken in the event of a discover of archaeological materials or human remains, to ensure that the project remains in compliance with the applicable state laws. The contact information provided in that document (Appendix D of Appendix H) is out of date. The final RAWP must include an updated copy of the Inadvertent Discovery Plan with the correct contact information (e.g. John Gross as the point of contact for Jorgensen Forge). Review the contact information for the appropriate police authority as the RAWP switches between the jurisdictions of the City of Seattle and City of Tukwila frequently.

Notification to State of Oregon of waste above 50 ppm PCB entering the State for disposal

The State of Oregon needs to be notified that materials exceeding 50 ppm PCB concentration are entering the state for disposal at the Chemical Northwest Facility in Arlington, OR. The final RAWP must include notification and approval from the State of Oregon for transporting these materials to the disposal facility in Arlington, OR.

Confirmatory Sampling

None of the sequencing of the events describes at what point confirmatory sampling will be obtained for the bank or the sediment. While the RAWP notes that the PPM Superintendent will schedule post-dredge z-layer sediment sampling activities following survey approval within the cofferdam and each DMU and prior to placement of the interim backfill, it's not noted in the appendices. The final RAWP must incorporate confirmatory sampling as a step in the overall sequence of the removal action.

Impacts to Surrounding Communities

Minimizing light and noise pollution at night: There is no mention of steps that will be taken to minimize noise and excessive light at night. These issues both arose during the removal activities at Boeing Plant 2 and T-117 given that there are live aboard vessels in the area, as well as surrounding neighborhoods within the LDW. The final RAWP and Community Health and Safety Plan must identify what steps will be taken to minimize noise and light during the hours of 10:00 PM to 6:00 AM.

Finalize the Community Health and Safety Plan: The final RAWP must include a Community Health and Safety Plan. The purpose of this document is to describe the Removal Action from the perspective of the community, identify the potential hazards and BMPs to address those hazards. The final CHASP must include the traffic routes of trucks from both the Jorgensen Forge facility and PPM TTD through Georgetown and South Park. As noted above, discussions of BMPs to minimize noise and light pollution, especially at night, must be described. Discussion of BMPs to minimize air emissions (e.g. idling trucks on site) must be described. Contact information in the final CHASP should be updated to reflect current project team members.

Specific Edits

Removal Action Work Plan Text

- Section 2.1 Removal Action Description: Revise the description of the RAB to include EPA's letter providing that 96 cubic feet be moved from the EMJ removal action to be addressed later under the Outfall Removal TCRA.

Appendices

Appendix A-1: Anchor HASP		
Section	Language	Comment
Emergency Contact Information	Facility Contact: John P. Gross	Update
EPA Environmental Response Team	(201) 321-6600	Check Phone number: the 24-hour spill hotline is (206) 553-1236 and National response Center number is listed earlier: (800) 424-8802
Key Safety Personnel	John P Gross	Update
Section 7.4.1	The decontamination fluids will be stored in sealable containers and will be properly disposed of.	Reference where the contaminated waste will be disposed of in this document.
Section 8.5 Handling of Investigation-Derived Waste	All remaining soil or sediment, fluids used for decontamination of sampling equipment, and sample collection disposable wastes (e.g. gloves, paper towels, foil or others) will be placed into appropriate containers and staged on site for disposal.	Identify where the waste water be disposed of from the decon process for the equipment and disposable waste. Describe how it will be managed and where it will be disposed of.
Section 8.9 Pressure Washing	The following procedure is required when using high-pressure washing equipment for decontamination purposes. . .	Describe BMPs that will be in place to prevent the pressure washing from ending up in the stormwater system.
Section 12.2.1.2 Prevention	The replacement fluid temperature should be kept cool, 50-60 F, and should be placed close to the work area.	Identify where this will be on-site. Include on final figure.
Section 12.2.1.2 Prevention	All workers to rest when any symptoms of heat stress are noticed. Rest breaks are to be taken in a cool, shaded rest area. Employees shall remove chemical protective garments during rest period and will not be assigned other tasks.	Identify where in the clean zone a shaded rest area will be provided. Include on final figure.

Appendix A-2: Pacific Pile Marine Health and Safety Plan		
Section	Language	Comment
Scope of Work		There is no list of the PPE that will be used at site, or maintenance of the PPE.
Section 3.5 Working Over Water	None	There is very little detail here about the equipment used, maintenance of equipment, when worn, etc. See Section 12. 1.12 of Anchor HASP for example of detail re: working over water.
MISSING: Boating Safety		No section on boating safety. See Section 12.1.11 from Anchor HASP for example.
MISSING: Noise Safety		No Section on noise. See Section 12.1.13 from Anchor HASP for example.
MISSING: Environmental Hazards of Heat and Cold		No Section on Heat or Cold stress. See Sections 12.2 from Anchor HASP for examples.
MISSING: Slip/Trip Fall Hazards		See Section 12.1.2 from Anchor HASP for example
MISSING: Electrical Safety		See Section 12.1.5 from Anchor HASP for example
MISSING: General Falls/Ladders		See Section 12.1.6 from Anchor HASP for example
MISSING: Lifting and Material Handling		See Section 12.1.14 from Anchor HASP for example
MISSING: Fire Control		See Section 12.1.15 from Anchor HASP for example
MISSING: Static Electricity and Transfer of Flammable Liquids		See Section 12.1.16 from Anchor HASP for example
Section 3.6 Vehicle Safety	None	Use of hand held electronic devices (e.g. cell phones or smart phones) should be addressed in the final HASP.
Section 3.6 Vehicle Safety	None	Much less detail than what is provided in the HASP for Anchor- Section 12.1.9. For example- no requirement that everyone who is driving a valid licenses. Should be addressed in final HASP.
Section 3.7 Hand Tools	None	More detail. See Anchor HASP Section 12.1.8 for example.
Section 3.8 Heavy Equipment	None	Same as above. See Section 12.1.7 of Anchor HASP for examples.
Section 3.9 Trenching (Excavation)	None	No roles identified in the HASP document for who is providing oversight and chain of command for safety like the Anchor HASP. Should be identified in final HASP.

Appendix A-2: Pacific Pile Marine Health and Safety Plan (Cont).		
Language	Language	Comment
Section 3.9 Trenching (Excavation)	None	More detail should be provided on addressing work near utilities. See Section 12.1.4 of Anchor HASP for example.
Section 3.9 Trenching (Excavation)	Stairs, ladders or ramped areas of ingress/egress must be present every 25 linear feet.	Same comment as prior. Since you are using ladders- need to include section on ladder safety. And slip/trip/fall safety.
Section 3.9 Trenching (Excavation)	The perimeter of each excavation shall be demarcated with an appropriate barrier.	By whom? When? No details on chain of command. See Anchor HASP for examples.
Section 3.10 PPE	None	No mention of what EPA level of protection is required for the jobs associated with removal work. See Section 10 of Anchor HASP for example.
Section 3.1 PPE	Eye Protection	No requirement for acceptable eye protection. See Section 10.1 minimum PPE of Anchor HASP for example.
Section 3.10 PPE	Shoes, Boots and Other Foot Gear	No mention of safety toe requirements. See Section 10 of the Anchor HASP for example.
Section 3.10 PPE	Life Jackets	No mention of how the lifejackets will be inspected, or by whom. See Section 12.1.12.1 PFD of Anchor HASP for example.
Section 3.10 PPE	None	No mention of Traffic Safety Vest. See Section 10.1 minimum PPE of Anchor HASP for example.
Section 3.10 PPE	Respiratory Protection	In the event respiratory protection became necessary- do not identify where to find equipment, standards for equipment, maintenance of equipment, storage of equipment. All this detail should be included in the final HASP.
Section 3.11 Incident/Accident Reporting	None	No identification of where the nearest medical provider is. Must be included in the final HASP.
	None	The Emergency Response Procedures between Anchor HASP and PPM are different. For example, Anchor has an AED on site, but PPM does not. Anchor specifies decontaminating the victim without delaying life-saving procedures, but PPM does not even identify decontamination or life-saving procedures. There is no information about anyone on site being CPR trained within the PPM HASP. There is no direction to administer the first aid or CPR/AED if properly trained. Must be addressed in the final HASP.

Appendix A-2: Pacific Pile Marine Health and Safety Plan (Cont).		
Section	Language	Comment
	None	No mention of reporting “near misses”. Must be included in the final HASP.
	First Aid Kit Locations	No map of where these areas are on site (Office Trailer or Crane Barge).
Section 3.13 Environmental Hazards	The work area shall be demarcated according to industry best practices standards which shall include a work zone (hot zone), decontamination zone (contamination reduction zone, or CRZ) and a clean zone.	Map of where these zones will be in the final HASP. PPM zones should overlap with Anchor zones. Anchor HASP mentions having places for staff to get shade cover from heat stress and similarly warm up from cold stress. Anchor HASP also mentions having beverages for heat stress. PPM should include in final HASP as well.
	Personnel Decontamination	Anchor HASP includes face and hand washing for CRZ. Anchor HASP also specifies no eating or smoking within the hot zone. Please see section 8.3 Personnel Decontamination from Anchor HASP for example. Final PPM HASP should include steps to decontaminate staff on site adequate for a CERCLA removal action.
General Comment		Anchor HASP addresses demarcating zones on boats to prevent contamination issues. PPM should review that example and include for water-related removal activities.
Section 4.0 Site Specific Job Hazard Assessment/Remediation		No mention of noise hazards, heat stroke or cold stress. All are included in the Anchor HASP. Should be included in the final HASP from PPM.
Section 4.0: Upland Excavation and Backfill	“These trucks shall not enter the work zone, and therefore not require decontamination on each rotation.”	As previously stated- because the entire upland site is a MTCA site, steps should be taken to prevent contamination leaving the Jorgensen Forge site. Include in final HASP.
		It does not appear there is going to be a site safety and health officer (SSHO) at the project while construction work is being conducted. This is a project is complicated because it involves handling of contaminated sediments. A SSHO onsite would hav authority to make occupational health and safety protection decisions at the project while the work is being conducted. In addition, the SSHO would be directly supervised by a Safety and Health Manager (SHM) with CIH credentials. SHM and SSHO elements were put in place to assure that timely and effective occupational health protection decisions are made when occupational health and safety hazards change as so often happens on construction projects.

Appendix A-2: Pacific Pile Marine Health and Safety Plan (Cont).		
Section	Language	Comment
		The description of chemical contamination and how it will impact the workers implementing this cleanup should be expanded on, even if the results of the contaminant exposure evaluation for workers implementing this cleanup shows little potential for exposure. Plan users (mainly the workers on this project) need to be able to read and understand how they are being protected from contaminant exposure or offered an explanation as to why the work being conducted just does not cause exposure at levels of occupational health and safety concern.
		There is nothing in the plan about occupational exposure monitoring. Some occupational exposure monitoring would confirm that use of PPE and requirements in the plan are correct for the level of PCBs at the site.
		Greater detail should be included in the event respirators were needed to be used at the site.
		A plan should be in place with emergency response providers for emergency response services for workers who may be contaminated with PCB sediment.
		There is no mention of medical surveillance as required for hazardous waste site cleanup operations (1910.120 (a) through (o) HAZWOPER for cleanup operations).
		The description of the PPE to be used does not really explain how it is protective for PCB exposure.

Appendix C Temporary Facilities and Controls and Environmental Pollution Control Plan		
Section	Language	Comment
Section 3.1 Physical hazards associated with demolition activities	During removal of stormwater culverts and grouting operations, free liquids may be found at the end of the pipeline and will be contained and captured to the extent practicable.	Identify what BMPs will be in place during the demolition work to minimize any materials from entering the LDW in final RAWP. Also address how integrity of plastic where any pipelines removed containing oily or discolored residue will be monitored/ensured in final RAWP.
	Debris shall be. . .stockpiled on the concrete pad between Shop Building and the Gas Storage Tanks. Materials not direct loaded shall have wattles placed around the stockpile when not being actively added to or removed from. Stockpiling debris will be limited to material that must be sized prior to off-loading.	Final RAWP must include steps to be taken to prevent release of contaminants from debris (including dewatering) in final RAWP. Because stockpiling clean backfill at same site, need to detail how they will not be cross contaminated in final RAWP. The final RAWP figure must include more detail of BMPs in place at the concrete pad where the debris will be stockpiled.
	All debris discovered that presents a threat to human health or the environment shall be removed. To the extent practicable.	Revise: All debris discovered within the Removal Action Boundary that presents a threat to human health or the environment shall be removed.
	The stockpile area will be built with layer impermeable PVC liner, crushed rock and ecology blocks.	Ensure the integrity of the PVC liner within the stockpile liner. Recommend steel plates on top of the crush rocked at the stockpile area.
	4” pump to remove water	The final RAWP must verify the type of pump used to ensure that it will be adequate for treating any water from the stockpiled material.
Section 4.0 MSDS System	None	No information on proper chemical storage. Must be included in the final RAWP.
Section 4.3 Hazardous Materials Management Plan	The HMMP (Attachment C) provides additional details related to the MSDS System and process.	Attachment C is not legible. Needs to be completely revised in the final RAWP.
5.0 Stockpiling	Stockpiled materials may include, but are not limited to, demolition debris, excavated shoreline bank materials, upland backfill gravel, filter materials, rip rap, and habitat substrate.	Given that there is limited space to stockpile, need to ensure that the clean materials are segregated from, and no cross contamination occurs with, the contaminated materials in the final RAWP. The final RAWP must include definitions of “stockpile containment area” and “stockpile staging area.”

Appendix C Temporary Facilities and Controls and Environmental Pollution Control Plan (Cont.)		
Section	Language	Comment
Section 5.2 Locations	The stockpile staging areas size may be adjusted in the field due to a limited work area.	The final RAWP will include Figures of the final stockpile areas and the stockpile staging areas. It will also identify where the clean backfill material will be stored in isolation/segregation from the contaminated materials. Finally, BMPs will be included for the concrete pad where debris will be place to prevent contamination.
Section 5.3 Tracking	The tracking spreadsheet will minimally identify the stockpile material, location of stockpile (if more than one stockpile is in the stockpile staging area where within the staging area the stockpile is located), approximate volume, and whether BMPs are in place.	The final RAWP will revise this to state that the tracking spreadsheet will identify all information necessary to safely manage the stockpiles and verify compliance with BMPs and the RAWP. This will include managing one stockpile at a time within the stockpile staging area, location of that stockpile in the staging area, approximate volume, and the BMPs in place for that stockpile.
Section 6.1.1 Upland	Due to a limited work zone footprint and timing of haul truck arrival, upland materials will be loaded into an articulated haul truck, transported to the stockpile area, dewatered, and loaded by an excavator into Waste Management's truck and trailers.	Provide calculations in the final RAWP about the time it will take to dewater these material to determine the maximum amount of excavated material that can be processed in a day. Given the issues that have occurred on production due to water treatment- want to identify if this will be a bottleneck for the schedule.
Section 6.1.1 Upland	Trucks will be routed through the work zone in a one way circular route.	Figures associated with the final RAWP must be revised to demonstrate how the traffic flow will occur in a one way circular pattern.
	None	The final RAWP must identify the BMPs to be used when moving material from the buckets to the trucks, and then again from the stockpile to the WM truck and trailers.
Section 6.1.3 Schedule A	The TSCA sediment within the cofferdam will be excavated from the shoreline . . .	All references to TSCA sediments should be revised to state that there are sediments with PCB concentrations above 50 ppm ("TSCA sediments").

Section 6.1.3 Schedule A	None	Final RAWP must include details of the BMPs that will be used, as well as the process, to ensure that the materials are not released during transport to the trucks. Final RAWP must include methodology for verifying that the trailers are water tight prior to transport. Include a diagram.
Section 8.0	None	From prior comment: the final RAWP must include zones (exclusion zone, decontamination zone, and contaminant zone) to prevent releasing contaminants from the Jorgensen Forge site. Should be referenced in this section, as well as description of how decontaminating equipment and materials at the site, and handling and disposal of materials at the site used in housekeeping.
Section 10.0 Air Pollution Control Procedures	Not only is particulate matter a concern but silica found in concrete can be a health hazard to workers.	No mention in Appendix A-2 for PPM of risks associated with the breaking of concrete. Did mention the potential need for respirator- here is an example where that should be evaluated.
Section 10.0 Air Pollution Control Procedures	Shut down equipment is idle for more than 5 minutes.	The final RAWP must be revised to state that all idle equipment must be shut down as soon as practicable, no more than 5 minutes of idling.
Section 11.0 Noise Management	As Jorgensen Forge facility is located on the LDWW in an industrial area, extensive noise reduction efforts are not required.	There have been complaints by some about night activities on Superfund Removal Action adjacent to this site. There are surrounding communities, and the sound travels on the water. The final RAWP must evaluate and apply, as practicable, mechanisms to reduce the noise from 10 PM- 6 AM.
	Figure 1	The figure shows trucks driving through the stockpiling area and water treatment system. The final RAWP figure must include the BMPs that will be in place to prevent the release of contaminants by the trucks as they move through the site, as well as decontamination measures and final inspection site prior to leaving Jorgensen Forge. The final RAWP figure must also identify where materials will be stockpiled for the excavation and demolition, which will be segregated/isolated from the clean backfill material stockpiled on site. BMPs preventing cross contamination will also be included. The final figure will include location of the stormwater drains on site.

Appendix C Temporary Facilities and Controls and Environmental Pollution Control Plan (Cont.)		
Section	Language	Comment
Attachment A- SWPPP; Element #2- Establish Construction Access	If truck tires contain soil or sediment that cannot be removed through dry decontamination methods it will be removed with a wheel wash system.	Considering that the uplands are a MTCA site, will use wheel wash. Identify on figures where the wheel wash will be installed, as well as where the catch basins are, if any, in immediate vicinity of JF on the route to WM. Identify the BMPs that will be used to manage the water in the wheel wash, and also decontamination/disposal of waste water, etc from wheel wash.
Attachment A- SWPPPP; Element 3: Control Flow Rates	All excavated slopes of the shoreline bank will be backfilled and therefore wattles will not be installed on the slope.	There is a time lag between when the bank will be excavated and backfill will be replaced. BMPs need to be in place in the event there is a storm event. Ecology guidance documents notes that, if bank is bare for 7 days, should have BMPs in place. Final RAWP will identify what those BMPs will be.
Attachment A- SWPPP; Element 4- Install Sediment Controls	None	No mention of sediment controls for the excavated bank face. Final RAWP will include what BMPs will be used here to prevent excavated bank face sediment from entering LDW. While it is mentioned elsewhere, there is no discussion of any booms or barriers in the water to prevent materials entering the LDW. Final RAWP must provide BMPs for controlling sediments from the bank face while it is exposed.
Attachment A- SWPPP; Element 5- Stabilize Soils	The excavation of the Early Action Area will be implemented under a U.S. Army Corps of Engineers 404 permit.	Incorrect. The excavation is being implemented under CERCLA, and is required to comply with the CWA Section 401 memorandum issued by EPA.

Appendix C Temporary Facilities and Controls and Environmental Pollution Control Plan (Cont.)		
Section	Language	Comment
Attachment A- SWPPP; Element 6- Protect Slopes	Where adjacent areas convey stormwater toward the construction area perimeter berms will be used to prevent run on.	The final RAWP must identify what BMPs will be used to manage any groundwater permeating through the excavated bank face. While the SWPPP focuses on erosion due to rain, here we need to consider erosion due to the groundwater flow.
Attachment A- SWPPP; Element 7- Protected Storm Inlets	Catch basins proximate to vehicle paths in project vicinity will be protected with storm drain inlet protection.	All catch basins within the active work area will be protected with storm drain inlet protection.
Attachment A- SWPPP; Element 7- Protected Storm Inlets	None.	The final RAWP will include the following BMP: Clean or remove and replace inlet protection devices when sediment has filled one-third of the available storage (unless a different standard is specified by the product manufacturer).
Attachment A- SWPPP; Element 9- Control Pollutants		The final RAWP will include a wheel wash be used on site. This will require that wheel wash or tire bath wastewater discharge to a separate on-site treatment system that prevents discharge to surface water, such as closed-loop recirculation or upland land application, or to the sanitary sewer, with local sewer district approval.
Attachment A- SWPPP; Element 9- Control Pollutants	An SPCC Plan has been prepared for the project and is included as Attachment A of Appendix C of this RAWP.	This reference should be to Attachment B to Appendix C.
Attachment A- SWPPP; Element 10- Dewatering		There is no BMP cited for Element 10. Assuming that is because this is detailed elsewhere in the RAWP. If so, add reference under this element where the details are re: BMPs for dewatering. If there are no BMPs for dewatering, then they should be developed for the final RAWP. Both for the barge treatment and the upland dewatering treatment with the stockpiles.

Appendix C Temporary Facilities and Controls and Environmental Pollution Control Plan (Cont.)		
Section	Language	Comment
Attachment A- SWPPP; Figure 2, SWPPP Controls	None	The figure provided does not include definitions of the symbols on the figure within the legend. From SWPPP Manual from Ecology, here is what is required: *The drawings show, on a site map, the specific BMPs which shall be installed. Provide text notes on the drawings to describe the performance standards the BMPs should achieve, and actions to take if the performance goals are not achieved.* The final RAWP must meet these SWPPP Manual requirements.
Attachment B- SPCCC		How address spill from any residuals in the culvert pipes on site? Must be included in final RAWP.
Attachment C- Hazardous Materials Management Plan	None	Completely illegible. Need to revise and resubmit.

Appendix D Demolition Plan		
Section	Language	Comment
Section 2.0 Worker Safety	All personnel on site will don the required PPE, which consists of, at a minimum. . . .	The list of PPE here is different than what is in HASP of Appendix A-2. Revise in the final RAWP.
Section 4.2 Sequencing	SWPPP will be implemented and BMPs will be installed including installation of a floating containment boom along the shoreline of the Lower Duwamish Waterway to contain floating debris and turbidity that may enter the water column.	No mention of the boom in the SWPPP Attachment A of Appendix B. Include this BMP during the discussion of the SWPPP as well in the final RAWP.
Section 4.2 Sequencing	The pilings will be placed on the sediment barge; any water generated from the pilings will be treated by the on-water treatment system.	No discussion of dewatering for any other debris generated during the demolition activities. Need to include for all portions of the demolition in final RAWP.
Section 4.2 Sequencing	Slag or large concrete that cannot be lifted from bank shall be sized prior to removal using 10,000 lbs hydraulic hammer attachment.	SWPPP guidance from Ecology mentions BMPs to use when dealing with concrete given its effect on pH for the water column. Review this section of the SWPPP and apply as necessary to this portion of the project in the final RAWP.
Section 5.0 Protection of the environment	Any grout spilled in the waterway shall be addressed in accordance with the SPCC.	No discussion of this specific scenario in the SPCC. Include this in the SPCC in the final RAWP, along with prior comment about cement, as it relates to preventing contaminants from entering the LDW during the demolition work.

Appendix E Dredge/Excavation, Haul Barge Transport, and Dewater Plan		
Section	Language	Comment
Section 2.1 Work Sequence	Excavate all non-TSCA materials within cofferdam followed by water treatment, haul barge transport, transloading and transportation to the landfill.	State as “above 50 ppm PCBs” or “below 50 ppm PCBs” vs. describing as TSCA/non-TSCA. Technically this is all TSCA waste, however the concentration is relevant to how the waste is disposed of.
Section 2.1 Work Sequence	None	No mention of when they will take confirmation samples from the dredge. Note in the text of the RAWP that the confirmation sampling will occur prior to backfill, but not identified in the appendices. Include as a step in the sequence in final RAWP.
Section 2.2 Equipment	This will give the barge 6’- 4” of freeboard to top of barge deck.	Assuming this is supposed to be 6 inches, not feet. Revise if that is correct in the final RAWP.
Section 3.0 Methods, Procedures, and Equipment for Excavation from the Top of Shoreline Bank	Excavated debris will be loaded into an articulated haul truck for transport to the upland stockpile/sizing location for debris and sized with an excavator and laborers on the ground as necessary to facilitate offsite transport and disposal.	Culverts. In Appendix D (Demolition) and C (Environmental Controls): need to discuss how handle the culverts if there is material inside of them, and then the culvert themselves if they contain contaminants. Final RAWP must identify BMPs to prevent any releases and/or manage any releases from the culverts during demolition in the final RAWP.
Section 3.0	An unlined debris sizing area will be established on the existing pad.	The final RAWP must include need liner and containment to prevent water/sediment from getting out. E.G. berm. Says that the stockpile area will be surrounded by Ecology blocks, but it does not sound like that carries over to the sorting area for the debris.
Section 3.0	As necessary, measures will be taken to ensure any water that comes into contact with the concrete pad will be drained so that water passively flows to a sump.	Confused. Is the debris not going to be treated like the rest of the stockpiled material? It should be. Remove “as necessary” and ensure that the debris is handled consistently with the other stockpiled material on the upland.
Section 3.0	A spill apron consisting of PVC sheet connected to the barge wall and draped over the sheetpile wall will be used.	The final RAWP must include a load bearing apron.
Section 3.0	Standing water within the lined containers will be actively removed from the containers using the 6-inch Godwin pump and pumped to the water treatment system located on the water treatment barge. (TSCA material)	Apply a performance standard of no visible free liquids for dewatering.

Appendix E Dredge/Excavation, Haul Barge Transport, and Dewater Plan (Cont.)		
Section	Language	Comment
Section 3.0	The stockpile area will be built with layer impermeable PVC liner, crushed rock and ecology blocks.	The final RAWP must include a discussion that addresses the integrity of the PVC liner with the crushed rock. Steel plates should be applied to prevent puncture through PVC liner. Also note frequency of inspection/maintenance of liner, or cross reference if that is specified elsewhere (e.g. SWPPP).
Section 9.0 Decontamination	None	Include decontamination after demolition in the event encounter hazardous/contaminated waste in final RAWP.
Section 9.1 Dredging Equipment Decontamination Procedures	The detergent of choice shall be a water/Alconox mixture	Are there any impacts from this detergent to the chitosan filter process? Clarify that this has been considered and what steps, if any, needed to be taken to ensure that the effectiveness of the chitosan process is not affected by the decontamination process.
Section 9.2 Dredging Equipment Decontamination Procedures		Include a description of the disposal of the chitosan sand filter, GAC filter and sand filter at the completion of the removal action. In Boeing, determined that the GAC filter met "PCB remediation waste, which had to go to landfill or regeneration unit." Ensure that the materials are properly characterized and disposed of.

Appendix G Water Management and Treatment Plan		
Section	Language	Comment
Section 2.2.5 Carbon Filtration	None	Include a description of the monitoring and disposal of the GAC filter. In Boeing, determined that the GAC met "PCB remediation waste, which had to go to landfill or regeneration unit." Regeneration of GAC that meets definition of PCB remediation waste in a unit other than one that has a TSCA approval is not allowed. ." Ensure that the materials are properly characterized and disposed of.
Section 3.0 Upland Water Treatment System Design	None.	Need to include monitoring for sediment and COCs prior to discharge in to the King County system.
Section 3.0 Upland Water Treatment System Design	A Discharge Authorization Letter will be obtained from King County Industrial Waste prior to discharging any treated water to the sanitary sewer system.	Must have authorization from King County, and a copy of that final authorization from King County, in the final RAWP.
Section 3.1 Upland Treatment Train	Water from the upland work areas and/or shoreline bank soils stockpile area will be pumped to a detention tank for settling.	Need to include description of how managing the demolition debris in final RAWP. Include culverts, large pieces of cement, etc and how you will dewater if necessary and treat that water, as well as BMPs in place to stockpile that material in uplands. See earlier comments for details.
Section 3.1 Upland Treatment Train	Permeable crushed rock will then be placed on top of the liner as a protective layer and a berm will be formed against the ecology blocks.	Review and confirm if there are any potential to the integrity of the PVC liner due to crush rock. Steel plates should be place on top of crushed rock. Also include note about monitoring and maintenance of this upland system.
Section 4.2 Dredge Water Removal	The close proximity of the sediment and water treatment barge will help mitigate the inherit risk of a pump line failing. Two small submersible pumps will be located on the sediment barge and will be used to remove any standing water that may develop in the bow section of the sediment barge.	Identify BMPs in the event of a pump line failure between the boats in final RAWP.

Appendix G Water Management and Treatment Plan (Cont.)		
Section	Language	Comment
4.3 Water Treatment Operations and Maintenance	These technicians will continually monitor turbidity levels at various points in the treatment system and adjust the system as required.	Identify where technicians are monitoring turbidity in final RAWP.
4.4 Treated Water Discharge	Treated water meeting the PPM water quality set-points, will be pumped through 6- inch diameter high-density polyethylene pipe into the LDW at the approximate location of dredging.	Identify what the water quality set-points are for discharge in final RAWP.
Section 5.2 Treated Water Discharge- Upland Water Management		Clarify if there is enough reserve capacity in the tank to accommodate the time necessary to get analytical results back and if discharge criteria are not met, to arrange for pickup and off-site treatment/disposal in final RAWP.

Appendix H Transload, Transport and Disposal Work Plan		
Section	Language	Comment
2.2 Key and Lead Personnel	None	Lacking information about H&S officer at the transloading facility. Include in the final RAWP.
3.1 Shoreline and Upland Excavated Soil and Debris	Soil, with either up to 50% debris, sized to no greater than 2x2, excavated from the shoreline and upland areas within the JF property will be loaded, either from stockpiles, .	Include details on how managing the stockpiles of debris in addition to the handling of materials from the excavation in the final RAWP.
	The trucks and trailers will be lined with 6-mil poly sheeting by PPM personnel at the designated liner installation area, prior to placement of the soil and debris into the trucks	Explain steps taken to ensure that the truck trailers are water tight prior to loading and moving off-site in the final RAWP.
	Same	Include explanation of how the trucks will be cleaned and decontaminated in final RAWP. Include wheel wash and how the water generated from wheel wash will be managed.
3.2 Debris Removed from Shoreline and Upland Areas	Containers will be loaded at the JF property and hauled to Union Pacific's ARGO Rail yard where the containers will be placed on rail cars and shipped to CRL disposal.	Include information of the measures taken to ensure containers do not spill at rail yard, or steps taken if there is a spill, etc.

Appendix H Transload, Transport and Disposal Work Plan (Cont.)		
Section	Language	Comment
3.3 Dredge Sediments Removed from LDW	Free water accumulating in the barges during dredging operation will be pumped off, to the extent possible, by the dredging contractor.	Explain what steps will be taken to do any additional dewatering at the transloading facility if the sediments are still wet, and how that water will be treated in final RAWP.
3.6 Barge Transloading/Truck & Trailer Loading	The dredge material will be unloaded directly from the barge into haul trucks- no material will be stockpiled on the ground.	Same comment as above.
	Any water collected as a part of the offload process will be collected in a water storage tank staged on-site and in the event of an unseasonable rainfall event or other unforeseen problem with the containment system.	Explain the basis for choosing an 18,000 weir tank and why assumed to be adequately sufficient for the volume of material being transloaded. Include information about how any water collected at site will be disposed of. Note that off-site treatment of water collected on site is subject to the Off-Site Rule.
	All oversized debris material will be rigged separately and off-loaded from the barge and staged in a lined area at the PPM Yard for sizing before being loaded directly into trucks for disposal.	Include details on water/sediment management of debris. E.G. “Sediments will be removed from the debris area as needed and disposed of”- how; where disposed of? Where is the large debris going to for disposal? Same as earlier comments specific to the upland treatment at the Jorgensen Forge site: the final RAWP needs to account for how managing environmental risks associated with contaminated debris.

Appendix H Transload, Transport and Disposal Work Plan (Cont.)		
Section	Language	Comment
	The PPM Yard crane will be utilized to lift mobile equipment onto the barges for final cleaning, if necessary. . .Oversized wood debris will be cut to acceptable lengths using chainsaws, hydraulic shears, or other practical means. Oversized metal debris will be sized using cutting torches, hydraulic shears, or other practical means. Any water that accumulates in the debris staging area will be pumped to the onsite water treatment system specifically set up for this project and treated prior to discharge to the POTW in accordance with the permit issued by King County or may be collected, transported, and disposed at an appropriately permitted facility.	The final RAWP requires more details on how decontaminating the equipment at the site, or how treating the water/sediment generated during decontamination.
3.7 Transloading of Subtitle C Sediment	All TSCA and non-TSCA Subtitle C Disposal Sediment will be loaded directly to poly lined containers located on flat deck material barges.	Need more detail about steps taken to ensure that the container is water tight in the final RAWP.
Section 4.0 Waste Tracking and Disposal	TSCA material will be transported in open top containers to the Union Pacific Rail Yard located at 402 South Dawson Street, Seattle, WA 98134	Have the containers covered in the final RAWP.
4.2 Soil Mixed with Less than 10% Debris to be used as ADC	None	Unclear what the rules are on when can use material as ADC, and how they will ensure that this material meets those requirements.
4.3 Soil Mixed with up to 50% Debris to be used as Beneficial Reuse	None	Same
4.4 Waste Exceeding 50% Debris	None	Same. Also- no details on the railcar loading at the ASRF. Include in the final RAWP.
5.0 Stormwater Management	None	In figures, include the location of the PPM TTD Stormwater Management system and any discharge point(s) in the final RAWP.

Appendix H Transload, Transport and Disposal Work Plan (Cont.)		
Section	Language	Comment
	Water collected in the TLCA will drain to a low lying sump area and will be pumped into the 18,000 gallon water collection system located in the yard.	Need details on treatment and engineering drawings in the final RAWP.
6.0 Housekeeping and Spill Response	Shoveling, sweeping and wash down will be utilized a necessary to keep areas outside of the Exclusion Zone clean.	Need to identify the zones where there will be decontamination of equipment and also personnel. Lacking any information on H&S. Include HASP for transloading facility. Ensure HASP reflects adequate PPE and zones given that employee may be exposed to hazardous waste while shoveling, sweeping, washing, etc. in the final RAWP.
BMPs: Wheel wash	A wheel wash may or may not be used as a final sediment removal process at the yard.	Include a wheel wash. To address concerns about the street outside of the transloading facility, require exiting trucks to go slow through wheel wash to allow sufficient drainage from undercarriage. Final RAWP should include BMPs to minimize track out and minimize impact of water from wheel wash to City streets.
Figure 2 Traffic Control Plan		Missing some details. For example- how are managing traffic control with the stockpile areas? Water treatment system- details. Wheel wash? Check for secure load prior to leaving site where? Must be included in the final RAWP.
Permits	King County Solid Waste Facility Permit	County said that the 18,000 gallon weir tank would trigger requirements for this- need to obtain prior to the final RAWP. Must include a copy as an attachment in the final RAWP.
	Permission from KC to discharge in to their sewer	Complete authorization is required for the final RAWP if there will be discharges in to KC's system. Must include a copy as an attachment in the final RAWP.

Appendix I: Vessel Management Plan		
Section	Language	Comment
Section 3.0 Navigation Routes	PPM will load backfill materials at CalPortland's Seattle Rock Yard on the LDW.	Identify what BMPs will be in place to minimize impacts to LDW WQ during loading.

Appendix J: Backfill Plan		
Section	Language	Comment
1.0 Purpose and Objective	Source of backfill materials	No chemistry is provided from the source site. Must have as part of the final RAWP.
2.0 Work Sequence	Backfilling will begin in the cofferdam.	Explain how backfilling will occur within the cofferdam given mention of +11 within cofferdam for structural reasons.
	B/t steps 7 & 8	Include when taking confirmatory sampling within the work sequence.
Section 5.0 Methods, Procedures and Equipment for Environmental Protection and Monitoring	All backfill materials will have the required chemical analysis performed for a wide range of potential chemical constituents to ensure that the backfill is in compliance with the Construction Specifications.	Needs to be provided to EPA prior to the final RAWP.
	None	No discussion of how to prevent backfill materials on the bank from getting in to LDW. Need to describe BMPs for this as well in the final RAWP.
	Material for the shoreline areas will be placed directly in the backfill areas, however may be temporarily stockpiled if the aggregate supplier cannot keep with onsite production.	Similar comment as earlier. If going to stockpile clean backfill with excavated material, need to figure out how to segregate/prevent cross contamination of the materials.
	None	Include step of washing the backfill material prior to placement to minimize turbidity.